



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,644	11/24/2003	Akiyoshi Chosokabe	Q78560	1192

23373 7590 05/18/2006
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

YANG, ANDREW GUS

ART UNIT PAPER NUMBER

2628

DATE MAILED: 05/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/718,644	Applicant(s) CHOSOKABE, AKIYOSHI	
	Examiner Andrew Yang	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments, see pages 5-9, filed February 16, 2006, with respect to the rejection(s) of claim(s) 1-6 under Randel and Drebin et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Nagoshi et al. (U.S. Patent No. 6,234,901).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Nagoshi et al. (U.S. Patent No. 6,234,901).

With respect to claim 1, Nagoshi et al. disclose a video block 11 in Fig. 1 comprising a VDP (Video Display Processor) 120 which mainly performs drawing of, for example, objects composed of polygon data in a video game; and a VDP 130 which mainly performs drawing of background pictures, synthesis of polygon picture data (of objects) with the background pictures, and clipping processing (column 6, lines 1-7). Nagoshi et al. disclose a main CPU 101 in Fig. 1 for executing application software at a high speed (column 5, lines 34-37), thus providing a means for performing the following steps. The main CPU provides a light source position acquisition means by determining

the position relationship the light source is located within a camera view (column 7, lines 55-56). In Fig. 3, the letter "A" indicates a unit vector on a line linking a camera position and the light source (column 7, lines 37-38); so, a viewpoint position acquisition means acquires the camera or viewpoint position as designated by 21. The CPU also provides a viewpoint direction acquisition means by determining to what extent the camera is facing in the direction of the light source (column 7, lines 54-55). A line linking the camera position with the light source object is converted into a line E on a two-dimensional screen and a route of the ray in a screen picture is specified (S116) in Fig. 2.

2. Flare polygons having the transparency D are drawn at appropriate positions along the line E (column 8, lines 34-38). Therefore, the position of a flare polygon, or highlight, is calculated by a highlight position calculation means based on the camera or viewpoint position along line E. Referring to Fig. 3, the unit vectors A and B, dependent on the light source position and viewing direction, form an angle θ (column 7, lines 40-41), and are used to calculate an inner product C (column 7, lines 65-66). As the value C of the inner product is larger, it means that a ray comes straight from the light source and enters the camera lens, thereby stronger flares (highlights) are generated (column 8, lines 24-28). Therefore a highlight intensity calculation means calculates intensity of the highlight based on the light source position and viewing direction. A transparency D in proportion to the value C is found (S114) in Fig. 2 (column 8, lines 32-33). If the transparency D is semitransparent, half of the luminance of a ground picture is added to half of the luminance of the flare polygons, and the results of addition are drawn on the frame buffer, thereby obtaining a flare picture (S118) in Fig. 2 (column 8, lines 38-42).

Because the position of the flare polygons is needed to perform the semitransparent composition with the ground picture, a semitransparent composition means performs the semitransparent composition based on the flare or highlight position. A semitransparent composition rate corresponds to the transparency D , proportional to inner product C , as calculated from vectors A and B , in which vector A corresponds to an incident light having a direction and size (or strength of light) (column 8, lines 7-8), thereby corresponding to the intensity calculated by the highlight intensity calculation means. In Fig. 1, a TV picture receiver 5 (or projector) provides an image display means for displaying the flare picture obtained from the semitransparent composition means.

With respect to claim 2 and 3, Nagoshi et al. disclose the system of claim 1, wherein a line linking the camera position with the light source object is converted into a line E on a two-dimensional screen and a route of the ray in a screen picture is specified (S116) in Fig. 2. Flare polygons having the transparency D are drawn at appropriate positions along the line E (column 8, lines 34-38) as calculated by the highlight position calculation means. This calculation is based on the viewpoint position, viewpoint direction, and light source position because line E is formed by the camera position and direction with respect to the light source position.

With respect to claim 4, Nagoshi et al. disclose the system of claim 1, wherein the unit vectors A and B in Fig. 3, dependent on the light source position and viewing direction, form an angle θ (column 7, lines 40-41), and are used to calculate an inner product C (column 7, lines 65-66). As the value C of the inner product is larger, it means that a ray comes straight from the light source and enters the camera lens,

thereby stronger flares (highlights) are generated (column 8, lines 24-28) as calculated by the highlight intensity calculation means. This calculation is based on the viewing direction and the direction connecting two of said light source position, said viewpoint position, and said highlight position because the unit vectors A and B used in the calculation are dependent on the viewing direction, light source position, and viewpoint position as shown in Fig. 3.

With respect to claim 5, Nagoshi et al. disclose a method executed by the system of claim 1 (see rationale for rejection of claim 1).

With respect to claim 6, Nagoshi et al. disclose an information storage medium for storing a program for cause a computer to function (column 7, lines 14-18) for implementing the method executed by the system of claim 1 (see rationale for rejection of claim 1).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent is cited to further show the state of the art with highlighting objects in 3D computer graphics:

U.S. Patent No. 4,952,921 to Mosier for providing a dot flare for user with a system

U.S. Patent No. 5,872,572 to Rossignac for a rendering engine performing lighting calculations dependent on the light source position and viewpoint

U.S. Patent No. 5,990,894 to Hu et al. for a method of providing realistic lighting effects dependent on the light source position and viewpoint

U.S. Patent No. 6,043,820 to Imura et al. for a 3D computer graphics display method dependent on the light source position and viewpoint

U.S. Patent No. 6,384,833 to Denneau et al. for a computer graphics lighting system dependent on the light source position and viewpoint

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Yang whose telephone number is (571) 272-5514. The examiner can normally be reached on 8:30-5 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman can be reached on (571) 272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AGY

5/12/06



MARK ZIMMERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600